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SESSION 1990–91
3rd REPORT

SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY

SCIENCE BUDGET 1991-92

VOLUME I—REPORT

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Ordered to be printed 20 March 1991

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Note:
References in the text of the Report are as follows:
(Q) Refers to a question in Volume II.
(Ev) Refers to an item of Written Evidence in Volume II.

THIRD REPORT

20 MARCH 1991

By the Select Committee appointed to consider Science and Technology.

ORDERED TO REPORT:

SCIENCE BUDGET 1991-92

CHAPTER 1: PREFACE

1.1 The science budget is the sum allocated annually by the Secretary of State for Education and Science to the five Research Councils on the advice of the Advisory Board for the Research Councils (ABRC). (The science budget also includes payments to the Royal Society, the Fellowship of Engineering, ABRC Secretariat and the Centre for Exploitation of Science and Technology, but this report is concerned only about Research Council funding.) In addition certain receipts from EC programmes accrue direct to the Research Councils and funded bodies. The funds received by the Councils are used to support research in their own institutes and laboratories and to support research and teaching in the universities through research grants and postgraduate awards.

1.2 On 8 November 1990, the Secretary of State for Education and Science announced that the science budget for 1991-92 would be £920.8m (net of EC receipts). Sir David Phillips, Chairman of the Advisory Board for the Research Councils, which tenders advice both on the PES bid for the science budget and on the allocation of the eventual settlement, is reported to have complained to the Secretary of State that this was "substantially less than the sums needed to sustain the health of the UK science base" (New Scientist 16 February).

1.3 On 24 January the Secretary of State, having accepted ABRC's advice on allocation, announced the apportionment of the budget to the various Research Councils (see para 2.4 below). His announcement was met with cries of anguish. Dr Dai Rees of MRC said "I am sorry to say that it looks as though we will be unable to fund some research which is vital to human health in the coming year". Professor Knill of NERC found the settlement "very disappointing, particularly in view of the high profile given by the Government in its Environment White Paper to the need for a strong base of environmental research and understanding to underpin environmental decision making". Sir Mark Richmond of SERC thought the settlement "lousy". Indeed, the drastic measures of retrenchment mooted at SERC caused many scientists to write despairing letters to the Select Committee. In the circumstances it seemed inevitable that we should conduct a short enquiry into what went wrong.

1.4 While looking at the science budget we have also tried to find out more about the likely effects of proposed changes to the dual support system. In addition to grants and awards from Research Councils, research in universities is also financed by general university funds derived from the Universities Funding Council (UFC) in the form of recurrent grant and from tuition fees. "The input from general funds should provide the basic 'floor' of research capability in university departments, enabling speculative ideas to be generated and developed to the stage at which specific funding can be sought". This capability includes the provision of "well-found" laboratories in departments suitably equipped for research (Civil Research and Development, 1st Report of the Science and Technology Committee 1986-87, HL 20 p 19). Taken together, the science budget and support from university general funds constitute what is known as the dual support system.

1.5 It was intended by DES that from 1991-92 Research Councils should become fully responsible for the costs of research they support—both full direct costs and a standard percentage contribution towards indirect costs. In the event, this has been postponed to 1992-93. This will entail the transfer to the science budget sums hitherto distributed by the UFC and managed by the universities. The universities have grave misgivings about this, and the issue seemed important enough to merit our scrutiny too. Our report thus falls into two parts—the science budget and the dual support transfer.

CHAPTER 2: THE SCIENCE BUDGET

HOW IS THE SCIENCE BUDGET ARRIVED AT?

2.1 The size of the science budget is set by the Secretary of State for Education and Science. It is arrived at by a process which includes the following:

(i) Advice from the Advisory Board for the Research Councils on the coming year's Public Expenditure Survey, which has regard to the resource needs of the various Research Councils and the health of the science budget as a whole. This advice is tendered in May each year. It used to be published by the Secretary of State every July. Publication was discontinued this year.

(ii) Advice which we presume is generated from within the DES itself, particularly with regard to the wider context of departmental spending of which the science budget is merely a part and which includes allocations to UFC and PCFC.

(iii) Detailed annual bilateral discussions between the Secretary of State and the Chief Secretary to the Treasury, in the course of which the advice of the Treasury and Chief Scientific Adviser and his staff at the Cabinet Office may be presumed to play a collective part (Q 113), and following which the DES expenditure for the coming year will be settled.

(iv) The decision by the Secretary of State, in the light of the outcome of the "bilaterals", of how much will be spent through the science budget as opposed to elsewhere in the Department. This is announced to Parliament in the form of a Written Answer in November as an accompaniment to the Autumn Statement.

(v) Further advice from the ABRC on allocation to the Research Councils of the science budget which has been agreed upon. This advice used to be published every December but the practice was discontinued this year. As DES told us, "The Secretary of State is predisposed to accept the ABRC's advice and did so in 1990 and again this year" (DES Ev). The allocations are announced to Parliament in late January and are set out in the DES Departmental Report on the Government's Expenditure Plans published in February. (This series of departmental reports replaces this year the former public expenditure White Paper.)

2.2 The process of settling the science budget is thus governed by many factors. A number are of particular concern to us and we shall return to them. The first is the extent to which advice of a non-financial character on the needs and objectives of the Science Budget from the Chief Scientific Adviser and his staff is brought to bear in preparing the Chief Secretary for his bilaterals on the Science Budget. The second is the extent to which the Secretary of State may take other intra-departmental considerations into account in exercising his discretion as to the final amount of the Science Budget. Finally, it is worth speculating whether, were it to take place—at any stage but especially around the time of the bilaterals—wider discussion within government of the political acceptability of any settlement (possibly by a Cabinet committee) might not on occasion produce a different outcome.

The 1991-92 Settlement

2.3 We begin by looking more closely at the 1991-92 settlement, the terms of which were set out in the Secretary of State's announcement of 8th November 1990 and in evidence to us from DES and Sir David Phillips (see especially QQ 99–107). The budget for 1991-92, settled at £920.8m, represents a 2.7 per cent increase over the £897m allowed for 1990-91. This was well below the rate of inflation (annualised increase in RPI) for November 1990, of 9.7 per cent; below the rate of inflation for January 1991, of 9.0 per cent; and even below the Government's estimate of 6 per cent for 1991-92, revised following the Budget to 7 per cent.

2.4 There are other factors which DES have taken into account, however, which enable them to say that "the recurrent funds available for allocation by the Secretary of State on the advice of the ABRC in 1991-92 are 6 per cent higher than the equivalent sum in 1990-91". These are:

- the rescheduling of postgraduate tuition fees from annual to thrice annual instalments, bringing a saving for the first year of operation of £8m;
- the freeing of £7m held in reserve by ABRC against possible attribution of expenditure under EC projects;
- the availability for expenditure on general scientific purposes of two large elements of capital expenditure which had remained in the "baseline". These were the sums of £17.3m for construction of the RRS James Clark Ross and £6m on building the new Research Council Headquarters at Swindon; and
- the deduction of £1.8m in respect of transferred responsibility for super-computing, for which no extra provision was made in SERC's budget.

2.5 Thus the total "extra" money available for allocation by ABRC in 1991-92, if these sums are added to the £23.8m straight increase over 1990-91 figures, can be calculated to be about £60.3m, or over 6 per cent (about 6.7 per cent by our calculation). This caused the Secretary of State to assert that the settlement maintained "the value in real terms of the underlying science budget" and that it provided "the basis for the continuing development of the country's science base". He told us that the budget would allow for the continued excellence of British science (Q. 199); there was no crisis, though he did acknowledge that serious difficulties had arisen in SERC's Science Board funding. Before we examine the validity of these assertions, we now turn to the allocation of the £920.8m and the effect it has had on the Research Councils.

The allocation

2.6 On 24 January 1991, the Secretary of State announced he had accepted ABRC's advice on allocating the budget for 1991-92. Table 1 shows the allocations to the five Research Councils for 1991-92, and the percentage change in the Research Councils' budgets from 1990-91.

Impact on the Research Councils

2.7 The Agricultural and Food Research Council (AFRC) received £93.5m in the 1991-92 budget allocation. This represents an increase of £7.6m (or 8.8 per cent) over the Council's 1990-91 allocation. (AFRC also receives substantial research commissions from MAFF (projected to be £33.6m in 1991-92) and industry, trusts, foundations, the EC and others (£19m in 1991-92).) Because the allocation from ABRC has not kept pace with current inflation, the result will be:

- several important activities remaining underfunded in 1991-92, in particular the programme on biological responses to global environmental change;
- a reduction by 50 per cent (to £2.3m) in the provision of replacement and new equipment for the seven AFRC institutes. This provision is now equivalent to only 3 per cent of the institutes' recurrent budget;
- a reduction in the funding of HEI research and training. Since the majority of the planned spending is committed to existing grants and training awards, there will be a disproportionate decrease (about 20 per cent) in the number of new grants awarded.

2.8 The Economic and Social Sciences Research Council (ESRC) received £35.5m in the 1991-92 budget allocation. This represents a decrease of £0.5m (or 1.4 per cent) over the Council's 1990-91 allocation. The allocation is considerably less than the resources needed to fund programmes sufficiently to secure the long-term aims of the Council. ESRC anticipated this situation last summer and took steps, which involved severe cutbacks in social science, to operate within its Science Vote allocation. This has resulted in:

- limitations to the funding of major new research programmes on global environmental change, on analysis of the 1991 Census data and in two new research centres in economics;
- reductions in continuing commitments to research programmes in macro-economic modelling, health economics, education, the effects of demographic change, and information and communication technologies;
- delay in the expansion of postgraduate training to meet the manpower demands of the 1990s;

- imbalances in the Council's portfolio between research modes, most notably in the less than planned expansion of support for research centres;
- reduction in the number of new research grants and studentships that can be awarded.

2.9. The Medical Research Council (MRC) received £200.4m in the 1991-92 budget allocation. This represents an increase of £14.7m (or 7.9 per cent) over the Council's 1990-91 allocation. (This includes £4.1m earmarked for the first phase of the Council's clinical research initiative. If this amount is excluded the 1991-92 allocation of £196.3m, represents an increase of £10.6m, or 5.7 per cent over the previous year's allocation.) As a result of the allocation, the Council has had to introduce a set of measures to balance the cost of planned activities and known commitments. These include:

- restricting the allowance made available for inflation on recurrent expenses allocations to 2.5 per cent;
- a reduction of over 20 per cent in the allocation for capital equipment;
- freezing the allocation for capital building at the 1990-91 level, with the result that projects already authorised will consume most of the allocation and very few new requests will be approved for funding;
- for financial planning purposes identifying "savings" (£3m in 1992 93) to be made against existing commitments to MRC units;
- maintaining project grant provision at planned levels, which will result in a 30 per cent reduction in the number of new awards that can be made each year over the next three years;
- a reduction of 2 per cent in the funds available to the Council's Research Boards for new awards during 1991-92.

Furthermore if income is as predicted some of the existing research that MRC would wish to retain in its portfolio will have to be terminated and new work that MRC would have wished to admit to the portfolio will have to go unfunded.

2.10 The Natural Environment Research Council (NERC) received £122.6m in the 1991-92 budget allocation. This represents an increase of £4.6m (or 3.9 per cent) over the Council's 1990-91 allocation. (This excludes the £17.3m which was earmarked for the construction of the RRS James Clark Ross.) The allocation will allow NERC to fund only a small part of its planned expenditure on new environmental science. In particular:

- only 40 per cent of its highest priority new science programme, the Terrestial Initiative in Global Environmental Research (TIGER) can be supported;
- there will be no additional support for a number of other high priority programmes such as the British Mid-Ocean Ridge Project, the Arctic research initiative and the AUTOSUB project;
- some existing laboratory research projects will be terminated;
- only a slow start on studies of natural processes, including the carbon cycle on land, the production of trace greenhouse gases from land based systems, will be possible.

2.11 The Science and Engineering Research Council (SERC) received £451.3m in the 1991-92 budget allocation. This represents an increase of £12.7m (or 2.9 per cent) over the Council's 1990-91 allocation, but falls well short of the estimated £40m required by SERC to fund its 1991-92 programme. As a result SERC has been forced to introduce a number of measures in order to match its programmes to its budget allocation. These include:

- a reduction of 50 per cent in the funds allocated to new research grants that can be funded;
- in Astronomy and Planetary Science, insufficient funds for the Polar Cap Radar, the Gravitational Wave Observatory, the Lyman FUSE missions and a full portfolio of earth observation instruments for the Polar Platforms;

- under the Engineering Board, sharp cutbacks in a number of areas, notably in information technology; advanced manufacturing engineering; engineering design; and support provided by Rutherford Appleton Laboratory for engineering applications of computing in universities;
- reduced support for central computing facilities;
- Nuclear Physics Board—closure in 1992-93 of the Nuclear Structure Facility (NSF) at the Daresbury laboratory;

In addition the Council is seriously considering:

- Science Board—possible withdrawal of funding from one of the two major neutron facilities that the Council supports for the use of several basic sciences at the Institut Laue Langevin (ILL) in Grenoble and ISIS at the Rutherford Appleton Laboratory. To help the Council reach decisions in this area a study will be carried out to assess the UK's need for neutrons over the coming years and the most effective way of providing them (due to report in October 1991). Until a decision is reached the Board's expenditure on grants and student awards will be reduced;

Support for the latter area of science will depend on the outcome of future science budget allocations.

What has gone wrong?

2.12 Witnesses complained of a number of factors which had combined to bring about the present difficulties with regard to the 1991-92 Science Budget. These are:

(i) under indexation;

(ii) prior commitment of "new" money;

(iii) annuality;

(iv) inflexibility of Research Council spending;

(v) international subscriptions;

(vi) cumulative effects of previous budgets.

Under indexation

2.13 By Government reckoning the settlement is worth over 6 per cent and "the value of the underlying science budget has been maintained in real terms" (DES Ev). Many witnesses pointed out, however, that this will prove to be true only if inflation for 1991-92 is 6 per cent or less and on the assumption that the costs of scientific research follow the pattern of GDP inflation as a whole (Royal Society para 3; Phillips Q 100). Moreover we note from the "Financial Statement and Budget Report 1991-92" that in view of budgetary changes the GDP deflator for 1991-92 has been raised from 6 to 7 per cent.

2.14 Inflation in January 1991 ran at 9.0 per cent per annum. There was every likelihood that wages costs alone would rise by more than 6 per cent. Moreover Research Councils, while they have no part in determining academic salaries, nevertheless have to meet the cost of any such increases in connection with research grants to HEIs and with units within HEIs. AFRC dreaded the AUT claim for a 16 per cent rise. SERC told us, for example, that "Every 1 per cent of an academic salary settlement that is 'unfunded' costs the SERC an extra £1m" (SERC Ev; NERC Ev). MRC had calculated that "academic-related pay increased by about 9.5 per cent between 1989-90 and 1990-91 financial years whereas the MRC's grant-in-aid increased by about 5.4 per cent over the same period. This shortfall on academic-related salaries is estimated to have cost MRC some £2m which represented a volume reduction in the amount of research that could otherwise have been funded (MRC Ev). Speaking of all Research Councils, Sir David Phillips estimated that every 1 per cent increase above the provision already made "will need for all of them an extra £2m, which will have to come from somewhere" (Q 101).

2.15 In addition to higher than inflation wage settlements, witnesses argued that science costs rose faster than inflation in general (Phillips Q 191). There is no universally accepted inflation index for R&D, but it is generally agreed that this is higher than general inflation (the GDP deflator) by 1 per cent to 2 per cent, especially when the high costs of 'state of the art' research equipment are included. The reasons for this were given to us by Sir Mark Richmond. Science equipment is always becoming more sophisticated and both equipment and periodicals are traded in international currencies (Q 46; CVCP Ev).

2.16 AFRC has a particular problem with the costs of superannuation which were rising faster than income, partly because of annual pensions increases in line with the Retail Prices Index (eg 10.9 per cent from April 1991). Currently 11 per cent of the Council's income is spent in this way. In 1996-97 it is estimated that it will be 15 per cent.

2.17 Besides, while the overall settlement stands according to the Government's calculation at 6 per cent, three out of the five Research Councils have to make do with significantly less as we have seen (para 2.6 and Table 1).

Prior commitment of "new" money

2.18 Part of this year's difficulty arises from the way in which the Government has calculated the "funds available for allocation" to the Research Councils (see paras 2.4 to 2.5). By Government reckoning some £60.3m in 'extra' money has been made available. But much of this has already been committed. £15m was already included in last year's planning figures. Moreover the money available for general expenditure from the two major capital projects, £17.3m in respect of RRS James Clark Ross and £6m in respect of the Headquarters building, had also already been taken into account by ABRC in its plans and in the recommendations which they made to the Secretary of State last year. As Sir David Phillips told us, "So that money had already been committed last year and is now to be counted again in some sense this year. Those recommendations, incidentally, were accepted by the Secretary of State, so that a number of new programmes were launched which depended upon that capital money becoming available for general scientific expenses" (Q 107). The Government on the other hand maintain that these capital costs were once-off rather than recurring capital provision and not intended to be built into the Research Councils' baseline.

2.19 The fact that these sums had already been committed to some considerable degree thus left the ABRC with far less room for manoeuvre in recommending its allocations than would at first sight appear from the terms of the Government's announcement of the increase in funds "available for allocation". Planning figures, it is true, are almost invariably committed in advance. But there seems to have been genuine surprise at the inclusion of the James Clark Ross and Headquarters expenditure in Government calculations of "new" money.

Annuality

2.20 Witnesses also drew attention to the consequences of the annual nature of the UK public expenditure process. Although planning figures are published by government for the second and third years of the PES process they are never enough to sustain a Research Council's first year programme. Thus the continued ability of Research Councils to sustain their programmes will rely on the marginal increases over and above the planning figures which may be won through the annual allocation. Councils do not know until a few months before the financial year begins exactly how much they will receive. And if the annual settlement "see-saws" then continuity of activity is jeopardised, as Sir Mark Richmond told us (Q 25).

2.21 The annual nature of public spending as practiced in the United Kingdom also means that there is little scope for carry over of funds from one year to the next. As MRC wrote, "... anything other than a small underspend (about £4m) is penalised by losing funds and there is no way in which funds can be built up for future use through prudent and planned savings. This means that the annual spend of some £200m has to be controlled within the window of £196-200m if the MRC is not to be penalised for underspending or stand accused of 'overcommitting resources'" (MRC Ev).

2.22 Research Councils have benefited from some relaxation of annuality rules. Under the Resource Management Arrangements agreed between the research councils, DES and the Treasury in 1989, Research Councils can carry forward from one financial year to the next a working balance of up to 2 per cent of gross recurrent expenditure. This currently amounts to about £7m in the case of SERC. In no circumstances can deficits be carried forward. Government departments on the other hand are allowed to carry forward up to 5 per cent underspending on eligible items under the End Year Flexibility Scheme (EYF).

2.23 The effect of such strict annuality, combined with unpredictability, is two-fold. Research Councils, to be prudent as ABRC expects them to be (Q 128), have to live within their planning figures. To avoid underspending they therefore have to resort to short term measures to balance the books. Alternatively they may be tempted to over-commit budgets in the hope that the eventual settlements over and above the planning figures for future years will prove adequate to sustain the programmes that were embarked upon. This was the policy of SERC under its former Chairman (Mitchell Ev p 1; Phillips QQ 131–3).

2.24 Witnesses undoubtedly found that annuality imposed upon Research Councils a straightjacket in which it was difficult to plan sensibly, spend efficiently and at the same time provide for fluctuations in spending, eg on salary costs, over which they had little or no control (MRC; SERC; Royal Society). They called for further relaxation of the annuality principle with a carry-over of about 5 per cent and grater continuity in budgetary settlements from one year to the next (SERC Ev; Richmond Q 42; MRC Ev).

Inflexibility of Research Council spending

2.25 Much Research Council spending is inflexible. Most of it cannot be cut back at short notice. Sir David Phillips thought that about 40 per cent of Research Council spending was inflexible in the sense that it related to activities which Research Councils could not get out of at short notice. In this category he included international subscriptions (11.9 per cent), a large percentage of the institutes' budget (22.3 per cent), superannuation costs (3.2 per cent), and a proportion of spending on units in higher education (9.1 per cent) (Q 127). To this he might have added administration costs (5.3 per cent).

2.26 The extent to which this inflexibility is carried over into individual Research Councils' budgets varies widely according to whether the Council funds large facilities, whether at home or abroad, or institutes. From the evidence we received SERC's spending patterns seemed to be the most inflexible though all Councils seemed to have some lumpy elements.

2.27 The effect of this inflexibility is that when short term spending cuts need to be made they fall unduly heavily—as paras 2.7 to 2.11 above illustrate—on new projects and on new grants and studentships. SERC for example has imposed a 50 per cent cut in new research grants, and a 15 per cent cut in studentships. Witnesses agreed that these are the lifeblood of university research. The irony for SERC is that until adjustments can be made in the medium term and the studentship and grant line 're-charged', these cuts run counter to preferred Council policy (endorsed by ABRC) of reducing the predominance of large facilities in Council spending (Q 3; SERC Ev).

International Subscriptions

2.28 Research Councils have to meet the costs of subscriptions to large facilities and institutes. These have been described fully in our recent report on International Scientific Programmes (Session 1990-91, HL Paper 24-I). Here again their exposure varies. SERC has to meet the particularly large costs of CERN (currently about £50m) and ILL (£8.7m). NERC's only major international subscription is to the Ocean Drilling Programme (£2.7m). MRC pays for United Kingdom membership of the European Molecular Biology Organisation, Council and Laboratory (£3.2m).

2.29 Witnesses complained that unexpected increases in these costs stem from a number of sources. The most common is a fall in the value of sterling against the currency in which payments are made. But a number of subscriptions (like those to CERN and EMBO) are based on GDP levels and vary accordingly. In the case of CERN, a recent 2 per cent increase in the volume of the programme had been agreed by the CERN Council against UK wishes. Research Councils have no protection against movements in these variables. SERC informed us how Swiss inflation, the 2 per cent volume increase, and relatively good UK GDP performance in 1987-89, meant that subscriptions had started to rise again in 1990 (Q 5). They drew attention to the danger that, with a steady or shrinking budget, the larger the subscription to the facility the smaller the resources potentially available for complementary work in UK universities and laboratories to exploit fully the facilities of CERN (Q 13). The increase in subscription for 1991 is £3.6m (offset to some extent for this year in a fall in the SERC share of the UK subscription to the European Space Agency) (Q 2). Although unexpected increases do not appear to have had a significant effect on SERC's overall position this year, the CERN and other subscriptions remain as cuckoos in the nest, perfectly capable of growing unexpectedly in future years just as they have in the past.

2.30 A number of witnesses therefore wished to see the science budget protected against these external factors. SERC proposed that planning figures should be automatically revised annually to take account of these "non-volume" increases in subscription costs—GDP effects, exchange rates and host country inflation (SERC Ev).

Cumulative effects of previous budgets

2.31 In this report we are not primarily concerned with long term movements in science funding. However it has been made clear to us that the present crisis has to be seen in a context of successive settlements over the last ten years or so which have left Research Council budgets very tight indeed. Sir Peter Swinnerton-Dyer of the UFC told us that the measures now being taken by Research Councils were "the sudden recognition of a crisis that has been building up for a long time. One expedient after another has postponed the day of reckoning, the shortfall of income, and the expedients have run out in what was anyway a rather unfavourable year. It would be a great mistake to think that it will all be all right in two or three years time and we just have to bridge this gap. We have been following that policy all through the '80s, and in retrospect crisis actions should have been taken much sooner" (Q 60). And on a previous occasion, Sir David Phillips told us that in his opinion there had been a decline both in the input of money as a proportion of GDP and in scientific output when measured by the, albeit crude, citations index (1990-91, HL Paper 24-II, QQ 634–5). This decline, from an admittedly high level, had been visible "over the last fifteen years or so".

2.32 Many other witnesses alluded to this relative decline, using a number of yardsticks, particularly the size of the science budget relative to GDP (Save British Science; CVCP Ev; Dr D H Roberts). The ABRC, in particular, drew our attention to the way in which the science budget had actually kept pace with both GDP and public expenditure quite well until about 1985-86; and again following increases under Secretaries of State Baker and MacGregor in 1989-90 and 1990-91. But the settlement for 1991-92 and the planning figures for 1992-93 and 1993-94 showed that the science budget once again was expected to rise by less than the expected rate of increase in GDP (Q 114).

2.33 For the sake of clarity we have set out the trends in both the Science Budget and in UFC funding of research since 1978-79. We have expressed these in cash terms, real terms using the GDP deflator and in real terms using "science base purchasing power" deflators (GDP deflator plus 2 per cent or plus 1 per cent). The results are set out in Tables 2 to 4, and Figures 1 to 3.

2.34 We agree with the Secretary of State that the science budget has risen substantially in real terms between 1979-80 and 1991-92. Using a conservative "science base purchasing power" deflator (GDP deflator plus 1 per cent) there has been a more modest real increase of 9.5 per cent. If UFC funding of research is also taken into account the picture is less encouraging. Total spending has risen by only 10.2 per cent in real terms but using the more conservative deflator (GDP deflator plus 1 per cent) we see an actual fall of 3.2 per cent.

2.35 Thus while there have undoubtedly been real increases in the science budget, it can be argued that they are more modest than the Government seems itself to believe.

2.36 Although international comparisons lie beyond the scope of our present short inquiry it is clear to us from recent studies of equivalent expenditure in France and Germany that UK spending is alarmingly less ("Research in the United Kingdom, France and West Germany: A comparison", H Atkinson *et al*, SERC, 1990, pp 15-16).

OPINION OF THE COMMITTEE

General

2.37 We think that the 1991-92 science budget falls far short of what is required to provide the "basis for the continuing development of the country's science base" (see para 2.5 above). There are three main reasons for this, one long term and two short term. The first is that, while in the long-term research council spending has risen in real terms by 23 per cent since 1981-82, other perfectly valid assessments show that Government spending on the science budget has barely risen at all (see Figure 1). If UFC research spending is included, the situation is much worse. Thus there is no fat left in the system to absorb or disguise the present crisis. The second reason is that inadequate provision has been made in the science budget for inflation. Current inflation is much higher and the Government's own expectations for 1991-92 following the budget are now of 7 per cent. Moreover, even if we accept the Treasury logic of a 6 per cent increase in budget, this is well below present rates of inflation on which many Research Council costs increases (especially wages costs) are likely to be based. And in any event, science cost increases are usually some 1 to 2 per cent higher still than the GDP deflator. The third reason is that a major element of the settlement—the sums available for general expenditure from the capital projects RRS James Clark Ross and the Headquarters building—had been considered by ABRC and the research councils to be already within the baseline of expenditure and available for general allocation and hence was mostly committed already. We do not intend to engage in a debate as to whether the exclusion of this expenditure from 1990-91 baselines for the purpose of calculating the 1991-92 increase was normal Treasury practice or, as some would allege, sharp practice. What is clear is that ABRC and the research councils had expected otherwise and their customers now have to live with the consequences.

2.38 The consequences are serious for all research councils. We are therefore particularly concerned that the hasty measures which they have all been obliged to take have affected new projects, grants and studentships, thus threatening the very seed corn of the United Kingdom science base.

2.39 A particular word needs to be said about the position of SERC which is experiencing the greatest difficulties of all. This is due to the policy of the Council under the previous Chairman in over-committing available resources in the expectation of settlement for 1991-92 at a level which simply did not materialise. The consequences are grave. We draw particular notice to the high level of cutback on grants and studentships which SERC have imposed to give short term relief and their decision, announced on 14 March 1991, to close the Nuclear Structure Facility (NSF) at the Daresbury laboratory to give long term relief. We have received many pieces of evidence in support of the retention of the NSF facility from leading United Kingdom and foreign scientists. There is no alternative facility in the UK. We do not presume to consider here the arguments for and against closure. But it is incomprehensible to us that a whole area of United Kingdom science should have to be precipitately abandoned as part of a series of crisis measures and we roundly condemn the practices and policies which have put so much at risk—whatever the excuse. Here again it is the researchers who have to live with the consequences.

2.40 We therefore feel bound to recommend that a further sum of £12m be made available to research councils for 1991-92. We arrive at this figure in part on the basis of the requirements of SERC. To maintain its current programmes and agreed commitments for 1991-92, SERC would have required an allocation of £40m. It was allocated £11.9m (plus £1.8m ear-marked funding to meet the transfer of responsibility for supercomputing) and made cuts of £16m. The remaining shortfall of about £12m has been met chiefly from the cuts in research grants and studentships. This £12m element in the total shortfall which provides us with our recommended sum. It is also of the same order as the result of applying a 7 per cent as opposed to a 6 per cent deflator to the science budget and the "DR" element of university research spending.

2.41 We further recommend that the sum be allocated to research councils in the usual way upon the advice of ABRC but with special emphasis on responsive mode funding. We assume that, *force majeur*, most of this sum will have to be allocated to SERC. But we hope that some will also find its way to the other research councils who have in the past pursued spending policies more consistent with their planning figures than has recently been SERC's practice.

2.42 This further sum is not to be yet another temporary expedient. We recommend that the Government use this period of grace to take an overview of spending under the science budget as a whole and to consider whether, in view of the alarming response of research councils to the present settlement, they are content to live with the consequences of their public expenditure policy for science. Earlier this year, three of our number along with scientists and MPs held an informal meeting with the Prime Minister who made clear that the Government are taking a strategic look at "where we are going on science" (HC Deb 6 February 1991 Col 361). We recommend that this strategic look should extend to the current budgetary problems.

2.43 Equally we recommend that the partial reprieve offered by this once off payment will be used by research councils, in particular the SERC, to take stock of the implications of the 1991-92 settlement and in particular of the implications of the future planning figures.

Annuality

2.44 We sympathise with those who complained of the difficulties of planning research council expenditure within the strict rules of annuality. Annuality as it has been described to us, combined with the uncertainties of the annual PES process, cannot make for optimum use of resources at the margin of research council expenditure.

2.45 We therefore recommend that the Resource Management Arrangements be reviewed to enable Research Councils with 'lumpy' costs to carry forward underspend of up to 5 per cent of gross recurrent expenditure. It is essential that any prudent planned under-spend be disregarded in annual PES negotiations, however, otherwise the purpose of this provision would be defeated.

Inflexibility of Research Council Spending

2.46 We consider that the current crisis in the science budget underlines the need for research councils, in particular SERC, to maintain flexibility in their budgets. Over commitment to 'big' science at large and joint facilities and programmes means that other areas of science continually have to bear the brunt of cuts. Since, if present funding patterns continue, this may be achieved only by closing whole areas of scientific activity, the Government should, as part of the overview recommended above, look hard at United Kingdom large and joint facilities and programmes and consider whether they are content with flexibility, especially of SERC proposals. But we would hope that flexibility can be restored to budgets without recourse to invidious choices.

2.47 Some degree of flexibility could also be achieved if researchers' levels of pay were uncoupled from that of university teachers allowing movement both upward and downward. While the scope for achieving this may be limited, it is nevertheless a logical step in view of the Government's reluctance to compensate Research Councils adequately for increases in salary costs over which they have no control. We therefore, somewhat reluctantly, recommend that each research council should be free to fix its own levels of remuneration within available resources. We recommend also that local variations should also be taken into account in determining researchers' pay.

International Subscriptions

2.48 We continue to be concerned at the pressure put on budgets particularly on SERC's budget by "non-volume" increases in subscriptions to certain international facilities, especially to CERN. In their evidence to us SERC proposed that planning figures should be automatically revised annually to take account of increases in such costs over and above estimates due to exchange rates, host country inflation and GDP effects.

2.49 In our recent report on International Scientific Programmes (2nd Report 1990-91, HL Paper 24-I, pp 29, 30) we observed that, "the government expects in due course to discipline itself to a narrower ERM band, of plus or minus two and a half per cent. We recommend that from now on Research Councils be expected to bear the risks only up to this lower level, with the same liability for movement in relation to the Swiss franc. The Treasury should then absorb all further currency movement, including any which results from revaluation or devaluation of either sterling or the currency of denomination." We repeat that recommendation.

2.50 So far as GDP effects are concerned some form of automatic accommodation in planning figures on the lines suggsted by SERC seems entirely reasonable to us. Research Councils would, of course, have to take the rough with the smooth and be prepared to lose money in some years. But such protection would help make for longer term stability. We therefore recommend that Research Councils who pay subscriptions which are calculated by reference to member country GDP be compensated by automatic revision of planning figures to take account of any upward or downward revision in estimated subscription cost.

The Advisory Process

251 There has been much criticism of the fact that ABRC's advice both in advance of PES and on the allocations is no longer published. It is of more concern to this Committee that ABRC's advice be tendered, taken into consideration and acted upon than whether or not it is published. But it seems to us that changing the practice in a particularly lean year for the science budget constitutes a most spectacular own goal on the part of the Department of Education and Science. Whatever the motives may have been, and in the opinion of DES they include the greater value

of having confidential advice to Ministers, the effect has been merely to heighten suspicion. DES maintain in correspondence with us that publication of the advice would not be conducive to good government (DES Ev). It seems to us that in this case the withholding of publication has not been conducive to good government.

2.52 Of deeper concern to us has been the apparent want of sound advice to the government machine as a whole in arriving at this politically untenable settlement. Because advice to Ministers is both a confidential and collective process we do not know where things went wrong. As we alluded before, (para 2.2 above) we do not know the extent to which the Treasury took into account advice of a non-financial character during the PES bi-lateral meetings; nor do we know the extent to which other intra-departmental consultations may have swayed the Secretary of State in exercising his discretion as to the final amount of the science budget; nor do we know what role, if any, is ever played by the appropriate Cabinet committee in reviewing the acceptability of the settlement reached.

2.53 Not only is there need for better advice to be brought to bear. It is time for Ministers to address the policy consequences of their funding decisions. Research councils are now being required to make choices about scientific endeavour which are too big to be left to councils alone without political guidance as to what is required of the science base in the context of present spending plans.

2.54 We recommend that to ensure both that wider advice is brought to bear and that Government is fully cognizant of the consequences of any eventual settlement, the Cabinet committee on science and technology should involve itself in the PES process for science. (This committee "set up specifically to deal with science matters across government" is chaired by the Prime Minister, continuing the practice of his predecessor, and was recently acknowledged by the Secretary of State for Education and Science (HC Deb 6 July 1991, Col 361).)

CHAPTER 3: DUAL SUPPORT

The Proposed Transfer

3.1 The Government announced on 8 November 1990, following a period of consultation which included ABRC, that they had decided that research councils should become responsible for meeting all the direct costs of the projects they fund at HEIs, apart from academic salaries and premises costs. Councils would also, by a standard percentage addition to direct costs, contribute to indirect costs. This change would require a transfer of funds from universities to the research councils. (HC Deb, 8 November 1990, Cols 27-28).

3.2 At present, about £830m is provided by the UFC to universities to support research. The DES estimate that the proposal will involve the transfer of about £100m per annum from UFC to the research councils, which represents that element of UFC funding of universities known as 'DR', hitherto paid by them in support of research council projects in proportion to the volume of grants awarded.

3.3 Originally it was envisaged that the change would be introduced in 1991-92. But in view of the preparatory work required this has been deferred until 1992-93 when it is expected that £50m will be transferred, followed by £100m in 1993-94. (HC Deb 24 January 1991, Cols 286-7 W). These figures may however be adjusted further in the light of experience.

3.4 The Government and the ABRC consider that the effect of these changes in university finances should be neutral and that the changes will make for clearer divisions of responsibility and more efficient deployment of resources. (DES Ev; Phillips Q 153). The universities on the other hand view the loss of control of these funds with dismay and think that in practice they will lose out (CVCP Ev; Swinnerton Dyer Ev.).

The Problems

Indentifying the costs

3.5 Witnesses gave the impression that there was no agreement on the level of indirect funding which would have to be supported by research councils after the transfer. University witnesses felt that the historical 40 per cent DR (recently reduced to 33 per cent) was frequently inadequate.

Indeed, it was so inadequate as to discriminate against those universities and departments with a high ratio of research to teaching (Roberts Ev) Indeed CVCP maintain that it is "already clear from studies of research costs led jointly by the CVCP and the research councils that there is underfunding on both sides of the dual system and that more money is being spent by universities in support of research council projects than the value of the DR component of the UFC's research allocation" (CVCP Ev). The consequence of this is that if more were transferred to the research councils than the amount of DR at present paid, the universities will have less to spend on teaching and other research activity. Sir David Philips on the other hand had maintained on an earlier occasion to the Committee that there was "evidence that quite often the university does not provide the part that it is expected to provide" (HL 74-II, 1990-91, Q 656).

3.6 And there appears to be no agreement as to whether or not the costs *can* be successfully separated out. While SERC thought that estimation of overheads was "probably easier than many have felt" (SERC Ev), one Vice Chancellor wrote that "... it has proved highly problematic to identify the basis for calculating the full costs of projects ... No satisfactory solution has been reached to that problem and a good deal more work is currently in progress." (Dr R.A.Y. Jones Ev).

Neutrality of the system

3.7 The Government and ABRC are adamant that the transfer of these funds will be of neutral effect because they will still flow back to universities albeit by a separate route, tied to individual projects (Philips Q 141).

3.8 Critics of the proposals fear that some form of 'ring fencing' of these sums will be required to prevent research councils from diverting them elsewhere. Sir Peter Swinnerton-Dyer thought that "very firm controls were needed", given the present funding crisis at SERC, for example, to ensure that the money would not have been raided for other purposes. But he doubted whether this could be continued. (Q 72). Even research council representatives like Sir David Phillips of ABRC and Sir Mark Richmond of SERC thought some measure of ring fencing would be necessary. Sir Mark thought that the money might "come with some indication attached which ultimately will be protected by the Public Accounts Committee in the way in which it was deployed" (QQ 17, 120).

3.9 But even if this were so the money would only continue to return to the universities at the same level if the ratio of university-based to other research council science remained the same (Q 72).

3.10 And it was recognised by both sides that individual universities and departments would benefit more than others. The emergence of research-based, as distinct from teaching, universities would be accelerated (SERC Ev). Research intensive universities will see a greater initial loss and more acute cash flow problems.

3.11 It also emerged in evidence that while 'DR' was paid exclusively to universities the transferred moneys now to be disbursed by the Research Counsils will be payable in support of any Research Councils project whenever it may be conducted—including those at polytechnics, Cranfield and the Open University (SERC Ev).

The young researcher

3.12 Some witnesses felt that by making this money so project specific, young researchers would lose out. For example, Sir Mark Richmond said that "very bright young potential researchers, in parts of the higher education system that do not attract research support through research councils are less likely than now to be able to fulfil their vocation" (SERC Ev). CVCP also feared that the changes "will lead to a loss of flexibility in the management of research. In particular the ability of universities to support innovative research and younger researchers may be severely impaired". (CVCP Ev). Sir David Phillips rejected this argument (Q 154).

University management

3.13 University witnesses complained that university administration would become more difficult as year on year fluctuations in funding would become bigger. (Swinnerton-Dyer Ev). CVCP thought that it was inefficient to manage the provision of research support services for much long-term basic research on a project by project basis (CVCP Ev). Even planning for the change seemed to be taking a disproportionate amount of effort (Jones Ev).

3.14 Sir David Philips, by contrast, thought that university management could be considerably improved if the principles behind the transfer were followed through and if other bodies which commissioned research from universities (industry, government departments, and possibly charities) were required to do the same. He said that "if all that were followed, the universities at the end would be much better off than they are at the moment" because they would start changing these other bodies for overheads (Q 153).

University Science Funding—the wider context

3.15 The apprehensiveness of universities about the proposed transfer stems in part from the decline in real terms in their funding for science over recent years. The trend in total UFC funding of research shown in Figure 2, reveals that although UFC funding increased by 20 per cent in real terms over the period 1979-80 to 1987-88, it has declined some 19 per cent since then. As the Royal Society note, "this has set up severe strains in the dual support system" (Royal Society Ev).

3.16 One consequence of this general shortage of money which has come to our notice is the problem of funding Jodrell Bank laboratory which is falling victim to a shortage of funds both at the University of Manchester and at SERC. A SERC grant was recently made available to construct a new radio telescope at Cambridge (part of the Merlin network) on the condition that it would be available as a national facility for use by both national and international observers. However the University of Manchester now find that their rolling-grant from SERC has not been increased to make this access possible. Furthermore the terms and amounts of their UFC grant make it impossible to find the sums required by taxing other sections of the University.

UFC-ABRC dialogue

3.17 While the CVCP and research councils are trying with DES to establish a workable scheme for the 'DR' transfer, we heard in evidence that no formal discussions of the implications of these changes were taking place between the ABRC and the UFC—the two principal paymasters of the science base. Sir Peter Swinnerton-Dyer, Chief Executive of the UFC, explained that whereas the UFC and its predecessor the UGC were once represented on ABRC, this had ceased under the policy of the present Chairman of the UFC, Lord Chilver. He felt that this was a source of regret and should be reversed because there was a need for "much closer coupling than there has ever been and the recent decoupling was a move in the wrong direction" (QQ 66-67; 71; 79). Sir David Philips, while he would welcome the Chief Executive of UFC rejoining ABRC, thought that the present philosophy of UFC was to encourage research councils to talk directly with universities. Although informal contact between secretariats continued it was difficult to see what policy decisions could be taken by ABRC and UFC together, given the prevailing philosophy (QQ 147-8). The Secretary of State appeared surprised that formal contact had apparently ceased.

OPINION OF THE COMMITTEE

3.18 *Prima facie*, the proposed transfer of 'DR' funds from UFC to the research councils is an appealing one on purely administrative grounds. But progress towards identifying costs appears to be difficult and slow; and no firm proposals for protecting the sums so transferred and ensuring that they in fact continue to be used in support of university-based research appear to have been made.

3.19 We recommend that unless a fully workable scheme can be set in place in good time for 1992-93 so that the consequences of the changes can be reflected in ABRC and UFC allocations for that year, the scheme should not be proceeded with.

3.20 We further recommend that research councils be required by the Secretary of State to ensure that the sums transferred continue to be used in support of university-based research only.

3.21 Finally, we consider that the present problems over the transfer of 'DR' have highlighted the need for UFC and ABRC to re-establish formal and working arrangements to manage the present funding crisis. In their allocation of public resources to the universities, the UFC should be concerned with the health of universities as whole institutions. Where policies regarding research council spending—both as to volume and method—threaten that health, it is imperative that UFC and ABRC take joint management decisions to deal as best they can with the consequences. We therefore recommend at the very least that UFC representation on ABRC be restored and vice versa.

Table 1: SCIENCE BUDGET ALLOCATIONS (1991/92)*

RESEARCH COUNCIL	1990/91 (£m)	1991/92 (£m)	Change (£m)	Change (%)
AFRC	85.9	93.5	7.6	8.8
ESRC	36.0	35.5	-0.5	-1.4
MRC	185.7	200.4	14.7	7.9
NERC**	117.9	122.6	4.6	3.9
SERC	438.6	451.3	12.7	2.9

*** The figure for 1990/91 excludes the £17.3m provided for the construction of the RRS James Clark Ross.*

** Source: DES Written Evidence, Annex C.*

TABLE 2: TREND IN THE SCIENCE BUDGET (1978/79 TO 1990/91)

	Outturn* Cash (£m)	GDP Defl** (90/91=1.000)	Outturn (90/91) £m	Index** (GDP Defl)	Index** (GDP Defl+1%)	Index** (GDP Defl+2%)
78/79	276.5	2.528	699.0	101.3	102.5	103.7
79/80	318.7	2.166	690.2	100.0	100.0	100.0
80/81	382.3	1.830	699.8	101.4	100.2	99.0
81/82	439.4	1.667	732.5	106.1	103.7	101.3
82/83	468.7	1.555	729.1	105.6	102.1	98.7
83/84	503.9	1.487	749.2	108.6	103.9	99.3
84/85	535.4	1.416	758.3	109.9	104.0	98.4
85/86	571.0	1.343	767.0	111.1	104.1	97.4
86/87	602.7	1.299	782.7	113.4	105.1	97.4
87/88	676.3	1.231	832.8	120.7	110.7	101.4
88/89	706.4	1.146	809.8	117.3	106.5	96.5
89/90	814.5	1.078	877.6	127.2	114.1	102.4
90/91	897.1	1.000	897.1	130.0	115.4	102.4
91/92	920.8	0.935	860.6	124.7	109.5	96.1

** Source: 'The Government's Expenditure Plans', 1984 to 1991.*

*** GDP Deflator Derived From: CSO Database 19th March 1991 and FSBR 1991/92 HC 300 (Tables 2.1 & 2.2).*

TABLE 3: TREND IN UFC RESEARCH FUNDING (1978/79 TO 1990/91)

	Outturn* Cash (£m)	GDP Defl** (90/91=1.000)	Outturn (90/91) £m	Index** (GDP Defl)	Index** (GDP Defl+1%)	Index** (GDP Defl+2%)
78/79	298.4	2.528	754.4	97.0	98.2	99.4
79/80	359.0	2.166	777.5	100.0	100.0	100.0
80/81	441.0	1.830	807.2	103.8	102.6	101.4
81/82	484.0	1.667	806.9	103.8	101.4	99.1
82/83	535.0	1.555	832.2	107.0	103.5	100.0
83/84	616.0	1.487	915.9	117.8	112.7	107.8
84/85	629.9	1.416	892.2	114.7	108.6	102.8
85/86	669.0	1.343	898.6	115.6	108.3	101.3
86/87	720.0	1.299	935.0	120.3	111.5	103.3
87/88	760.0	1.231	935.9	120.4	110.4	101.2
88/89	770.0	1.146	882.7	113.5	103.0	93.4
89/90	780.0	1.078	840.5	108.1	97.0	87.0
90/91	800.0	1.000	800.0	102.9	91.4	81.0
91/92	810.0	0.935	757.0	97.4	85.5	75.0

** Source: 'Annual Review of Government Funded R&D', 1984 to 1990, and DES.*

*** GDP Deflator Derived From: CSO Database 19th March 1991 and FSBR 1991/92 HC 300 (Tables 2.1 & 2.2).*

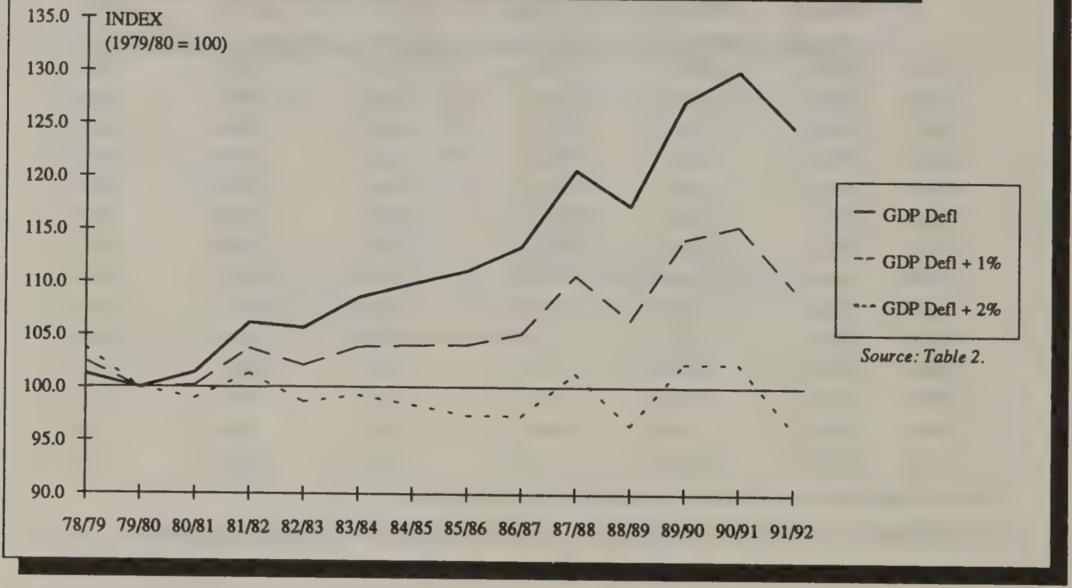
TABLE 4: TREND IN THE SCIENCE BUDGET & UFC RESEARCH FUNDING (1978/79 TO 1990/91)

	Outturn* Cash (£m)	GDP Defl** (90/91=1.000)	Outturn (90/91) £m	Index** (GDP Defl)	Index** (GDP Defl+1%)	Index** (GDP Defl+2%)
78/79	574.9	2.528	1453.4	99.0	100.2	101.4
79/80	677.7	2.166	1467.7	100.0	100.0	100.0
80/81	823.3	1.830	1507.1	102.7	101.5	100.3
81/82	923.4	1.667	1539.4	104.9	102.5	100.1
82/83	1003.7	1.555	1561.3	106.4	102.8	99.4
83/84	1119.9	1.487	1665.1	113.4	108.5	103.8
84/85	1165.3	1.416	1650.4	112.4	106.5	100.7
85/86	1240.0	1.343	1665.6	113.5	106.3	99.5
86/87	1322.7	1.299	1717.7	117.0	108.5	100.5
87/88	1436.3	1.231	1768.7	120.5	110.5	101.3
88/89	1476.4	1.146	1692.5	115.3	104.6	94.8
89/90	1594.5	1.078	1718.1	117.1	105.1	94.2
90/91	1697.1	1.000	1697.1	115.6	102.7	91.1
91/92	1730.8	0.935	1617.6	110.2	96.8	84.9

** Source: (Science Budget + UFC Research Funding), Tables 2 and 3.*

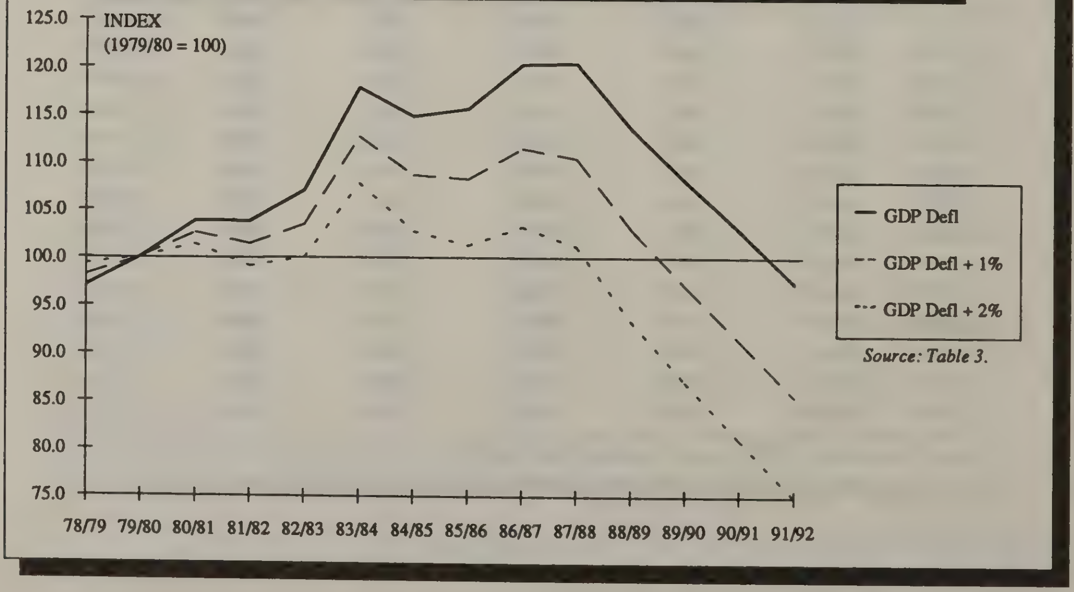
*** GDP Deflator Derived From: CSO Database 19th March 1991 and FSBR 1991/92 HC 300 (Tables 2.1 & 2.2).*

FIG.1: TREND IN THE SCIENCE BUDGET (1978/79 TO 1991/92)



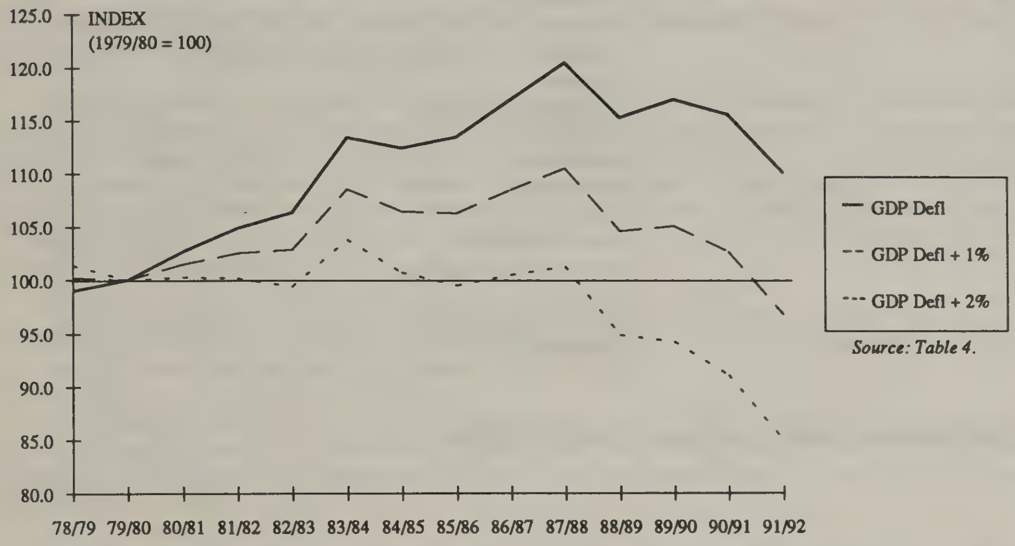
Source: Table 2.

FIG.2: TREND IN UFC RESEARCH FUNDING (1978/79 TO 1991/92)



Source: Table 3.

FIG. 3: TREND IN THE SCIENCE BUDGET & UFC RESEARCH FUNDING



Source: Table 4.

APPENDIX 1

List of Committee Members

L. Adrian
L. Butterworth
V. Caldecote
L. Carver
L. Clitheroe
L. Dainton
L. Flowers (Chairman)
L. Gregson
L. Kearton
L. Kirkwood
B. Nicol
B. Platt of Writtle
L. Porter of Luddenham
L. Shackleton
L. Taylor of Blackburn
L. Whaddon

The Specialist Adviser was Professor Roger Williams

APPENDIX 2

Letter of invitation to give evidence

The House of Lords' Select Committee on Science and Technology decided today to hold a brief series of meetings on the science budget for 1991-92 and its implications.

They have taken this step against the background of mounting distress in the scientific community at government spending plans.

The science budget of £928m for 1991-92 was allocated to the five research councils by the Secretary of State for Education and Science on 24 January. This represents a 3% increase over 1990-91. At a time of rising wages costs and with inflation at 9.3%, the Committee are alarmed at the effect which such a modest increase will have on research council budgets. Of particular concern to them are the recent funding problems at the Science and Engineering Research Council (SERC) which receives nearly half the science budget and supports a number of large facilities, some of them overseas.

The Committee also understand that university funding for research may suffer when, in 1992-93 and 1993-94, sums hitherto supplied to universities for research through the University Funding Council are transferred to research council budgets.

Mr Kenneth Clarke has said that the science budget for 1991-92 "provides the basis for the continuing development of the country's science base" (HC Deb 9 Nov 1990 cols 29-30W). The Science and Technology Committee will wish to examine whether, in the light of recent developments, this is true.

The Committee will wish to hear evidence from the research councils; the universities; and the government. And written evidence from all interested parties is also invited. The Committee will be looking for answers to the following questions:

Research Council Funding

1. To what extent are research councils' current financial difficulties the result of:

    (i) the overcommitment of resources and, by implication, poor financial or strategic management on the part of research councils;

    (ii) the failure of government to make an adequate allowance for increased academic salaries;

    (iii) increases in subscriptions to international projects;

    (iv) the failure of budgetary increases to keep pace with inflation;

    (v) the difficulty of terminating projects; or

    (vi) any other reason.

2. What is your view about your Research Council's budget allocation for 1991-92? What difficulties do you envisage arising out of this allocation, ie will it constrain your activities in any way or lead to the untimely end of projects?

3. The Secretary of State considers that the science budget for 1991-92 "provides the basis for the continuing development of the country's science base" (HC Deb 9 Nov 1990 cols 29-30). Do you agree?

4. What is your most pressing financial problem?

5. Will the present financial difficulties lead you to reconsider the balance of your portfolio?

Changes to the Dual Support System

1. What is your view about the proposed changes to the Dual Support System? What will be the impact of the transfer of money from the UFC to the Research Councils on:

   (i) teaching;

   (ii) research council funded research; and

   (iii) the capacity of Higher Education Institutions to maintain the ‘floor’ of research capability enabling speculative ideas to be explored.

2. Will the new system accelerate the *de facto* emergence of research-based and teaching-based universities?

3. What problems do you envisage with the new system? To what extent is it possible to make an adequate estimate of research overheads?

4. What are the advantages and disadvantages of the new system?

For further details contact the Clerk to the Select Committee, Dr R H Walters, Committee Office, House of Lords, 071-219-6075.

APPENDIX 3

List of witnesses

*Advisory Board for the Research Councils
Agriculture and Food Research Council
*Clarke, The Rt Hon Kenneth, Secretary of State for Education and Science
*Committee of Vice-Chancellors and Principals
Committee of Directors of Polytechnics
Connerade, Professor J P (Imperial College)
Coventry Polytechnic
Durrands, Professor K J, Polytechnic of Huddersfield
Economic and Social Research Council
Gelletly, W
Graham-Smith, Sir Francis, University of Manchester
Institution of Electrical Engineers
Jones, Dr R A Y, UEA Norwich
Kelly, Professor A, University of Surrey
Kellerman, Dr E W
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Printed in the United Kingdom by HMSO at Hansard Press
Dd 0507570 3/91 C9 PS 1902560 PC 44083

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